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मानक

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IS 5430 (1981): Ammonia Preserved Concentrated Natural Rubber Latex [PCD 13: Rubber and Rubber Products]



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IS : 5430 - 1981

Indian Standard
SPECIFICATION FOR
AMMONIA PRESERVED CONCENTRATED
NATURAL RUBBER LATEX
(*First Revision*)

UDC 678.4.031



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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

February 1982

**AMENDMENT NO. 2 MARCH 2003
TO
IS 5430 : 1981 SPECIFICATION FOR AMMONIA
PRESERVED CONCENTRATED NATURAL RUBBER
LATEX**

(First Revision)

(Page 4, clause 2.1) — Delete 'Type MA'

(Page 5, Table 1, col 4) — Delete the column (4) and renumber the subsequent columns

(PCD 13)

Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 1 NOVEMBER 1987

TO

IS:5430-1981 SPECIFICATION FOR AMMONIA
PRESERVED CONCENTRATED NATURAL RUBBER LATEX

(First Revision)

(Page 6, clause 5.1) - Substitute the
following for the existing clause:

'5.1 Packing - The latex shall be packed in mild steel drums with internal bituminous coating of capacity 200 + 5 litres. Polyethylene or epoxy lined mild steel drums may also be used for packaging, if specifically required by the consumer on mutually acceptable terms (see IS:5190-1969*).'

(PCDC 14)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR AMMONIA PRESERVED CONCENTRATED NATURAL RUBBER LATEX (*First Revision*)

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Indian Standard
SPECIFICATION FOR
AMMONIA PRESERVED CONCENTRATED
NATURAL RUBBER LATEX
(*First Revision*)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 10 December 1981, after the draft finalized by the Rubber Sectional Committee had been approved by the Petroleum Coal and Related Products Division Council.

0.2 Preserved latex is an alkaline liquid with the rubber particles suspended in a colloidal form in an aqueous phase. Being the basic material for many of the consumer and industrial products, the quality of latex needs to be controlled strictly. This standard is, intended to provide the plantation industry a guide to produce latex to suit the requirements of consumers.

0.3 This standard was first published in 1969. In this revision, the method of expressing alkalinity and coagulum content has been changed; and the requirement for total solids content has been removed. All these changes have been done to align it to the extent possible with the corresponding ISO standard.

0.4 This standard contains clause 3.4.1 which call for agreement between the purchaser and the supplier.

0.5 In the formulation of this standard, considerable assistance has been derived from ISO/DIS 2004.2 'Rubber, natural latex, centrifuged or creamed, ammonia-preserved specification' published by International Organization for Standardization.

0.6 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Rules for rounding off numerical values (*revised*).

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1. SCOPE

1.1 This standard prescribes the requirements and the methods of test for concentrated natural rubber latices, preserved mainly with ammonia.

2. TYPES

2.1 This standard covers three types of concentrated natural rubber latices as follows:

Type HA — Centrifuged natural rubber latex preserved with ammonia only or by formaldehyde followed by ammonia with an alkalinity of at least 0.6 percent.

Type MA — Centrifuged natural rubber latex preserved with ammonia and other preservatives as agreed to between the purchaser and the supplier with an alkalinity above 0.3 percent but less than 0.6 percent.

Type LA — Centrifuged natural rubber latex preserved with ammonia and other preservatives as agreed to between the purchaser and the supplier, with an alkalinity of not more than 0.3 percent.

3. REQUIREMENTS

3.1 Colour — The colour for all types of latex, when visually examined, shall not be pronounced blue or grey.

3.2 Odour — For all types of latex there shall not be any pronounced odour of putrefaction after neutralization with boric acid.

3.3 The latex shall conform to the requirements prescribed in Table 1.

3.4 Optional Requirements

3.4.1 The limit for magnesium content when determined in accordance with the method prescribed in IS 3708 (Part II)-1968* shall be as agreed to between the purchaser and the supplier.

4. SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY

4.1 The method of drawing representative samples of the material and criteria for conformity shall be as prescribed in Appendix A.

*Methods of test for natural rubber latex, Part II.

TABLE 1 REQUIREMENTS FOR CONCENTRATED AND PRESERVED NATURAL RUBBER LATICES

(Clause 3.3)

Sl. No.	CHARACTERISTIC	REQUIREMENT			METHOD OF TEST, REF TO
		Type HA	Type MA	Type LA	
(1)	(2)	(3)	(4)	(5)	(6)
i)	Dry rubber content, percent by mass, <i>Min</i>	60.0	60.0	60.0	NRL . 1 of IS : 3708 (Part I)-1966*
ii)	Non-rubber solids†, percent by mass, <i>Max</i>	2.0	2.0	2.0	—
iii)	Coagulum content, percent by mass of latex, <i>Max</i>	0.05	0.05	0.05	IS : 9316 (Part III)- 1979†
iv)	Sludge content, percent by mass, <i>Max</i>	0.10	0.10	0.10	NRL . 5 of IS : 3708 (Part I)-1966*
v)	Alkalinity as ammonia, percent by mass of latex	0.6 <i>Min</i>	Above 0.3 but below <i>Max</i> 0.6	0.3 <i>Max</i>	NRL : 7 of IS : 3708 (Part I)-1966*
vi)	KOH number, <i>Max</i>	1.0	1.0	1.0	NRL . 8 of IS : 3708 (Part I)-1966*
vii)	Mechanical stability, s, <i>Min</i>	475	475	475	NRL . 9 of IS : 3708 (Part I)-1966*
viii)	Volatile fatty acid number, <i>Max</i>	0.15	0.15	0.15	NRL . 10 of IS : 3708 (Part I)-1966*
ix)	Copper content, ppm of total solids, <i>Max</i>	8	8	8	NRL . 13 of IS : 3708 (Part I)-1966*
x)	Manganese content, ppm of total solids, <i>Max</i>	8	8	8	NRL . 15 of IS : 3708 (Part I)-1966*

NOTE.— Test for mechanical stability shall be carried out at least 20 days of the packing of rubber latex

*Methods of test for natural rubber latex, Part I Dry rubber content, total solids, coagulum content, viscosity, sludge content, density, total alkalinity, KOH-number, mechanical stability, volatile fatty acids number pH, total nitrogen, total copper, total iron, total manganese, and total ash

†Difference between total solids content and dry rubber content Total solids content may be determined in accordance with IS : 9316 (Part IV)-1979

‡Methods of test for rubber latex : Part III Determination of coagulum content.

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5. PACKING AND MARKING

5.1 Packing — The latex shall be packed in drums, so that each drum contains 200 ± 5 litres according to the procedure prescribed in IS : 5190-1969*, unless otherwise specified by the purchaser.

5.2 Marking — The containers shall be marked with the following.

- a) Name of the producer or trade-mark, if any;
- b) Type of latex (2.1);
- c) Net and gross mass in kilograms, and volume in litres,
- d) Dry rubber content (DRC), and
- e) Date of packing.

5.2.1 The containers may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

A P P E N D I X A

(Clause 4.1)

SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY

A-1. TANK SUPPLIES

A-1.1 When the material is supplied in tanks or other bulk containers, each tank or bulk container shall be sampled separately.

A-1.2 A representative sample shall be drawn from each tank or bulk container according to clause 6 of IS : 9316 (Part V)-1979†.

*Code of packaging of natural rubber latex in drums.

†Methods of test for rubber latex: Part V Drawing of samples.

A-1.3 The sample shall be tested for all the requirements given in Table 1. The material in tank or bulk container shall be considered as conforming to this specification if the corresponding representative sample satisfies all the requirements given in the specification.

A-2. DRUM SUPPLIES

A-2.1 Lot — In a single consignment, all the drums of the same size, same type and belonging to the same batch of manufacture shall constitute a lot.

A-2.2 For ascertaining the conformity of material to the requirements of this specification, samples shall be tested from each lot separately.

A-2.3 The number of drums (n) to be selected for sampling shall depend on size of the lot (N) and shall be in accordance with col 1 and 2 of Table 2.

TABLE 2 SCALE OF SAMPLING

LOT SIZE (N)	NO OF DRUMS TO BE SELECTED (n)
(1)	(2)
Up to 25	3
26 to 50	5
51 to 100	7
101 and above	10

A-2.4 These drums shall be chosen at random from the lot. In order to ensure the randomness of selection, reference may be made to IS : 4905-1968*. In case this standard is not readily available, the following procedure may be adopted:

Starting from any drum in the lot, count them as 1,2,3, up to r and so on in one order, where r is the integral part of N/n . Every r th drum thus counted shall be withdrawn to constitute the required sample size.

*Methods for random sampling.

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A-3. METHOD FOR TAKING SAMPLES FROM SELECTED DRUMS

A-3.1 From each of the drums selected according to **A-2.3**, a representative sample shall be drawn in accordance with the procedure prescribed in clause 5 of IS : 9316 (Part V)-1979*.

A-4. TEST SAMPLE AND REFEREE SAMPLE

A-4.1 From the samples (**A-3.1**) representing different drums in the lot, a small but approximately equal quantity of material shall be taken and mixed thoroughly to form a composite sample, not less than 600 g. The composite sample so obtained shall be divided into three equal parts, one for the purchaser, another for the supplier and the third for the referee.

A-4.2 The remaining portions of the material in the samples (**A-3.1**) shall be divided into three equal parts, each forming an individual sample. One set of individual samples representing the containers selected (*n*) shall be for the purchaser, another for the supplier and the third for the referee.

A-4.3 All the individual and composite samples shall be transferred to separate containers. Each container shall then be sealed air-tight with stoppers and marked with full details of sampling, the date of sampling, year of manufacture, batch or code number and other important particulars of the consignment.

A-4.4 The referee sample consisting of a composite sample and a set of individual samples shall bear the seals of both the purchaser and the supplier and shall be kept at a place agreed to between the two. This shall be used in case of any dispute between the two.

A-5. NUMBER OF TESTS

A-5.1 Tests for determination of dry rubber content, alkalinity as ammonia volatile fatty acid number and mechanical stability shall be conducted on each of the individual samples.

A-5.2 Tests for the remaining characteristics shall be carried out on the composite sample.

A-6. CRITERIA FOR CONFORMITY

A-6.1 The lot shall be declared as conforming to the requirements of the specification if **A-6.1.1** and **A-6.1.2** are satisfied.

*Methods of test for rubber latex : Part V Drawing of samples.

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A-6.1.1 For characteristics tested on individual samples (*see A-5.1*), all the test results on each of the individual samples shall satisfy the corresponding requirements given in Table 1.

A-6.1.2 For the remaining characteristics given under 2, all the test results on composite sample shall meet the corresponding requirements specified under 2.

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INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	DEFINITION
Force	newton	N	1 N = 1 kg.m/s ²
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m ²
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m ²

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